

REMARKS / ARGUMENTS

The present application includes pending claims 1-28. Claims 1-4, 15-20 and 23 are rejected under 35 USC 102(e) as anticipated by Boucher et al. (US Patent No. 6,226,680, hereafter Boucher). Claims 5-14, 21-22 and 24-28 are rejected under 35 USC 103(a) as being unpatentable over Boucher et al. in view of (not necessarily in the same order or combination) Kistler, Microsoft (Winsock Direct and Protocol Offload on SANs, 03/03/2001), Official Notice, Hayes et al.

Claims 1, 10, 12, 23 and 28 have been amended, as set forth above to further clarify the language used in these claims and to further prosecution of the present application. The Applicant submits arguments with respect to claims 1-28 and respectfully submits that the claims define patentable subject matter.

I. REJECTION UNDER 35 U.S.C. § 102(e)

MPEP 2131 states:

“[a] claim is anticipated only if **each and every element** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” See MPEP at 2131 (internal citation omitted). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” See *id.* (internal citation omitted).

The Proposed Boucher (US Patent No. 6,226,680) Does Not Anticipate Claim 1-4, 15-20 and 23 As Unpatentable

The Applicant turns to the rejection of claim 1 under 35 U.S.C. § 102(e) as being anticipated by Boucher et al. (US Patent No. 6,226,680 hereafter Boucher). The Applicant submits that Boucher does not teach at least the limitations of **“a network connector; a processor coupled to the network connector”** and **“a unified driver coupled to the PCI bridge,”** as recited by the Applicant in the independent claim 1.

A. Rejection of Claim 1

With respect to independent claim 1, in the Office Action, the Examiner states in the Office Action at pages 2-3 that Boucher discloses a server, comprising:

“a network connector (fig. 13, col. 16 lines 6-12, network line 210, four network lines are presented for different conduits, but each of them is a media independent interface);
a processor coupled to the network connector (fig. 13, microprocessor 470, col. 16 line 62-col. 17 line 13), the processor being adapted to process a plurality of different types of network traffic (abstract, col. 3 lines 35-67, col. 13 lines 24-35, the intelligent network interface card INIC's processor supports an offload traffic via fast path and regular IP traffic via a slow path);
a peripheral component interface (PCI) bridge coupled to the processor (fig. 13, PIC bus interface unit); and
a unified driver coupled to the PCI bridge, the unified driver being adapted to provide drivers associated with the plurality of different types of network traffic (fig. 10 and 11, col. 14 l. 9-13 and 61-66, INIC miniport driver determines whether the traffic is fast path offload traffic and slow path IP traffic).”

Firstly, the Applicant submits that Boucher does not teach or disclose the limitation of **"a network connector; a processor coupled to the network connector"** as recited in claim 1 by the Applicant. Boucher in FIGs 9, 10 and specifically FIG. 13 teaches or discloses the use of a plurality of network lines, for example, **"four network lines 210, 240, 242 and 244 which may support different conduits**, such as twisted pair, coaxial cable or optical fiber, **each of the connection providing a media independent interface (MII).**" (See Boucher col 16, lines 6-10).

In FIG. 9, Boucher teaches that "Network lines 210, 240, 242 and 244 are each connected to a dedicated row of hardware circuits which can each validate and summarize message packets received from their respective network lines." (See Boucher col 13 lines 12-15) Boucher in FIGs 9, 10, 12 and 13 respectively discloses using the plurality of network lines coupled to the INIC 200 to communicate network signals to other devices. Therefore Boucher's teaching of using a plurality of network lines (i.e. resulting in a requirement of the need to use a connector for each network line) contradicts the teaching of using **"a network connector"** as recited in claim 1 by the Applicant.

Therefore the Applicant submits that Boucher's lack of the teaching of using **"a network connector"** subsequently leads to a lack of the teaching of **a processor coupled to the network connector** in claim 1.

Secondly, the Applicant submits that Boucher does not teach or disclose **"a unified driver coupled to the PCI bridge"**. Although Boucher discloses that the INIC 200 is coupled to the INIC Miniport Driver 306 (See FIG. 10 of Boucher), there is no disclosure or suggestion found in any of Boucher's figures or in the specification that teaches or discloses that the INIC miniport driver 306 is coupled to the PCI bus interface unit (BUI) 468.

Furthermore, the Applicant submits that FIG. 13 and FIG. 10 of Boucher does not establish any teaching or suggestion that the INIC Miniport Driver 306 is coupled to the PCI bus interface unit 468. For example, Boucher in FIG. 13 discloses that the INIC 200 is coupled to the four network lines 210, 240, 242, 244 and to the PCI bus 257. Boucher, with regards to FIG. 12 and FIG 10, respectively, teaches or discloses that the INIC 200 is coupled to the servers 190 (client) and 200 (host) through respective network lines 210 and 240. In addition, Boucher with regards to FIG. 9 also discloses that the INIC 200 is coupled to the host server 200 using a PCI bus 205 (through the PCI Bus Unit 468).

Therefore, the Applicant submits that Boucher teaches that the network lines 210, 240, 242 and 244 and the PCI bus can all be used to couple the INIC 200 to a host server. There is a lack of disclosure or suggestion that the PCI Bus Unit 468 is coupled to the INIC Miniport Driver 306 (i.e. through the PCI bus 205) as suggested on page 3 in the Office Action by the Examiner. Therefore, the

Applicant respectfully submits that Boucher does not teach **“a unified driver coupled to the PCI bridge”** as recited in claim 1 of the Applicant’s invention.

Accordingly, based on Boucher's lack of teaching of the limitations of **“a network connector; a processor coupled to the network connector”** and **“a unified driver coupled to the PCI bridge”** as recited in claim 1, the Applicant respectfully requests that the rejection of independent claim 1 under 35 U.S.C. § 102(e) be withdrawn.

Furthermore, The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of independent claim 1 should such a need arise.

B. Dependent claims 2-4 and 15-17 Are Not Anticipated By Boucher.

The Applicant submits that dependent claims 2-4 and 15-17 depend directly or indirectly from the independent claim 1, and are allowable for at least the same rationale as discussed above for the independent claim 1. Accordingly, the Applicant respectfully submits that dependent claims 2-4 and 15-17 are also allowable. The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 2-4 and 15-17 should such a need arise.

C. Claims 18 Is Not Anticipated By Boucher.

The Examiner states in the Office Action that Boucher discloses a method for network interfacing, comprising:

“(a) handling a plurality of different types of network traffic via a layer 2 (L2) connector (fig. 13, col. 16 lines 6-12, a network line 210 connected to a MAC controller supporting both offload traffic and regular IP traffic);
(b) processing the different types of network traffic in a single chip (fig. 13, microprocessor 470, col. 16 line 62-col. 17 line 13, col. 3 lines 35-67, the INIC supports an offload traffic via fast path and regular IP traffic via a slow path); and (c) determining which of the different types of network traffic accesses software services via a single data path (fig. 10 and 11, col. 14 l. 9-13 and 61-66, INIC miniport driver determines whether the traffic is fast path offload traffic and slow path IP traffic).” (See the Office Action page 4-5)

The Applicant submits that Boucher lack of disclosure or teaching of at least the limitation of “handling a plurality of different types of network traffic **via a layer 2 (L2) connector**” and “determining which of the different types of network traffic accesses software services **via a single data path**”.

Firstly, the Applicant has earlier submitted that Boucher’s teaching of using a plurality of network lines 210, 240, 242 and 244 “... **each of the connection providing a media independent interface (MII)**.” (See Boucher col 16, lines 6-10). Thus Boucher lacks a teaching of “handling a plurality of different types of network traffic **via a layer 2 (L2) connector**”.

Secondly, the Applicant submits that Boucher's teaching of the INIC miniport driver 377 sorts and directs processing of network messages **through two paths** - either a command driver 360 (fast path) or a conventional stack 350 (slow path) contradicts with the Applicant's teaching of "**via a single data path**" as recited in claim 18. Specifically, Boucher, with regards to FIG. 11 teaches:

"A command driver 360 works in concert with the host stack 350 to process network messages. . . The conventional stack 350 and command driver 360 share a network driver interface specification (NDIS) layer 375, which interacts with the INIC miniport driver 306. The **INIC miniport driver 306 sorts receive indications for processing by either the conventional host stack 350 or the ATCP driver 360.**"
(See Boucher col 14 lines 57-66)

Therefore, the Applicant submits that Boucher does not teach or disclose "determining which of the different types of network traffic accesses software services **via a single data path**" as recited in claim 18 by the Applicant.

Accordingly, based on Boucher's lack of teaching of the limitations of "handling a plurality of different types of network traffic **via a layer 2 (L2) connector**" and "determining which of the different types of network traffic accesses software services **via a single data path**", the Applicant respectfully requests that the rejection of independent claim 18 under 35 U.S.C. § 102(e) be withdrawn. The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of independent claim 18 should such a need arise.

II. REJECTION UNDER 35 U.S.C. § 103

In order for a *prima facie* case of obviousness to be established, the Manual of Patent Examining Procedure ("MPEP") states the following:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the teaching. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

See MPEP at § 2142, citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (emphasis added). Further, MPEP § 2143.01 states that "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art suggests the desirability of the combination," and that "although a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a *suggestion or motivation in the reference* to do so'" (citing *In re Mills*, 916 F.2d 680, 16 USPQ 2d 1430 (Fed. Cir. 1990)). Moreover, MPEP § 2143.01 also states that the level of ordinary skill in the art cannot be relied upon to provide the suggestion..., citing *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ 2d 1161 (Fed. Cir. 1999). Additionally, if a *prima facie* case of obviousness is not established, the Applicant is under no obligation to submit evidence of nonobviousness.

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

See MPEP at § 2142.

D. The Proposed Combination of Boucher and Kistler Does Not Render Claims 10-11 Unpatentable

The Applicant turns to the rejection of dependent claims 10 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Boucher as applied to claim 1 above, and further in view of Kistler et al. (US Pub. No.: 2002/0198934, hereinafter Kistler).

The Applicant submits that the combination of Boucher and Kistler do not teach or disclose at least the limitations of **“a network connector; a processor coupled to the network connector”** and **“a unified driver coupled to the PCI bridge”** as recited in claim 1. Specifically, FIG. 3 in Kistler teaches using an emulator 324 running on application OS 322 coupled to the NIC 321 and to the keyboard 326, video 328 or mouse 330 services to the console server 320. However, Kistler does not teach or disclose the limitations of **“a network connector; a processor coupled to the network connector”** and **“a unified driver coupled to the PCI bridge”** as recited in the independent claim 1. Claims 10 and 11 depend from independent claim 1 and therefore are allowable for at least the same rationale as in claim 1. Consequently, the Applicant respectfully requests that the rejection of dependent claims 10 and 11 under 35 U.S.C. § 103(a) be withdrawn.

Furthermore, the Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 10 and 11 should such a need arise.

E. The Proposed Combination of Boucher and Microsoft (Winsock direct and Protocol Offload on SANs, 03/03/2001) Does Not Render Claims 12-14 Unpatentable

The Applicant turns to the rejection of dependent claims 12-14 under 35 U.S.C. § 103(a) as being unpatentable over Boucher as applied to claim 1 above, and further in view of Microsoft (Winsock direct and Protocol Offload on SANs, 03/03/2001, hereinafter Microsoft WSD).

In the Office Action page 7, the Examiner states:

“However, Microsoft discloses the unified driver is coupled to a software TCP processor and to a socket service switch , wherein the software TCP processor is coupled to the socket service switch (Microsoft , fig. 1, a socket switch between a TCP/IP socket provider and a SAN provider), and wherein the socket service switch is coupled to a socket service (Microsoft, fig. 1, switch coupled to socket application).”

Based on the citation of the Office Action above, the Applicant submits that the Examiner refers to the Winsock Direct being the unified driver in Figure 1 of Microsoft WSD. The Applicant submits that FIG 1 of Microsoft WSD architecture teaches the advantages of using a socket switch after the socket application to select two separate paths: a bypass path through the Winsock Direct to the SAN Provider and to the NIC, or a conventional path to the TCP/IP

socket provider and through the TCP/IP driver. Specifically, Microsoft WSD on page 4 teaches:

"Figure 1 outlines the differences between the traditional networking model and Winsock Direct. The **"switch" is the key** to enabling WSD-it enables the application Winsock calls to be **redirected to WSD rather than going down the conventional TCP/IP path**. WSD then calls down to the SAN Provider to manage fabric and hardware specific issues. The SAN Provider is the equivalent to an NDIS driver, but in user space."

Microsoft WSD's teaching of the "switch" however, isolates the Winsock Direct (i.e. the unified driver according to the Examiner) from the TCP/IP driver, resulting in the Winsock Direct and the TCP/IP driver are not coupled to each other. Therefore, Microsoft WSD's teaching contradicts the teaching of **"a unified driver is coupled to a software TCP processor and to a socket service switch"** as recited in claim 14 by the Applicant. Therefore, the Applicant submits that Boucher in view of the Microsoft WSD do not render claim 14 unpatentable.

In addition, the Applicant submits that the combination of Boucher and Microsoft does not teach or suggest at least the limitations of **"a network connector; a processor coupled to the network connector"** and **"a unified driver coupled to the PCI bridge"** as recited in independent claim 1. Claim 12 to 14 directly or indirectly depends on independent claim 1, consequently are allowable based on the same rationale as in the independent claim 1. Accordingly, the Applicant respectfully requests that the rejection of dependent claims 12-14 under 35 U.S.C. § 103(a) be withdrawn. Furthermore, The

Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 12-14 should such a need arise.

F. The Proposed Combination of Boucher and Official Notice Does Not Render Claims 12-14 Unpatentable

The Applicant turns to the rejection of dependent claims 21-22 under 35 U.S.C. § 103(a) as being unpatentable over Boucher as applied to claim 18 above, and further in view of Official Notice.

The Examiner states in the Office Action page 8:

“it is well known in the art how to employ time division multiplexing (TDM) to transmit multiple traffics over one channel in different timeslots. Therefore , it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Boucher and what is well known in the art to send multiple traffic over one channel using TDM in order to minimize cost of buildings multiple channels unnecessarily.”

The Applicant traverses this rejection by the Examiner to suggest that “employing TDMA to determine which of the different types of network traffic access the software services via the single data path” and “dynamically allocating fixed resources between among the different types of network traffic” as recited in claims 21-22 by the Applicant are obvious based on the following Traversal Of Official Notice.

Traversal Of Official Notice

(On Page 8 at Paragraph 24 of the Office Action)

The Applicant disputes the Examiner's assertions that it is well known in the art how to "employ time division multiplexing (TDM) to transmit multiple traffics over one channel in different timeslots" and "dynamically allocating fixed resources between among the different types of network traffic", and that it would have been obvious for one skilled in the art at the time the invention was made to combine the teachings of Boucher and what is known in the art to send multiple traffic over one channel using TDM in order to minimize cost of building multiple channels unnecessarily. (page 8 of the Office Action). Because Boucher clearly does not disclose or suggest employing time division multiplexing (TDM) to transmit multiple traffics over one channel in different, the Applicant can only assume that the Office Action is taking Official Notice of the subject matter disclosed in claims 21-22 regarding the use of TDM in the Applicant's invention.

Assuming the Office Action is asserting Official Notice that the subject of the above listed statements is common knowledge, the Applicant respectfully traverses the perceived and explicit assertions as further set forth below. Alternatively, if the Office Action's assertions are based on the personal knowledge of the Examiner, then under MPEP § 2144.03(C) and 37 C.F.R. § 1.104(d)(2), the assertions must be supported by an affidavit from the Examiner.

According to MPEP § 2144.03(A), Official Notice, without supporting references, should **only** be asserted when the subjects asserted to be common knowledge are "capable of instant and unquestionable demonstration as being well-known." That is, the subjects asserted must be of "notorious character" under MPEP § 2144.03(A).

However, the Applicant respectfully submits that the subject matter of the

perceived and explicit assertions of Official Notice, as stated in pages 8 of the Office Action, are not well-known in the art as evidenced by the searched and cited prior art. The Applicant respectfully submits that the Examiner has performed "a thorough search of the prior art," as part of the Examiner's obligation in examining the present application under MPEP § 904.02.

Additionally, the Applicant respectfully submits that the Examiner's searched and cited references found during the Examiner's thorough and detailed search of the prior art are indicative of the knowledge commonly held in the art. However, in the Examiner's thorough and detailed search of the relevant prior art, none of the prior art taught or suggested the subject matter of the perceived and explicit assertions of Official Notice with regards to claims 21 and 22, as stated in page 8 of the Office Action. That is, the Examiner's thorough and detailed search of the prior art has failed to yield any mention of the limitations in claims 21-22, which the Office Action concedes are not explicitly found in Boucher, and which the Examiner asserts are widely known in the art. The Applicant respectfully submits that if the subject matter of these assertions of Official Notice had been of "notorious character" and "capable of instant and unquestionable demonstration as being well-known" under MPEP § 2144.03(A), then the subject matter would have appeared to the Examiner during the Examiner's thorough and detailed search of the prior art.

If the Examiner had found any teaching of relevant subject matter, the Examiner would have been obligated to list the references teaching the relevant subject matter and make a rejection. Consequently, the Applicant respectfully submits that the prior art does not teach the subject matter of the perceived assertions of Official Notice stated in page 8 of the Office Action and respectfully traverses the perceived assertions of Official Notice.

The Applicant specifically challenges the perceived and explicit assertions

of Official Notice with regard to claims 21-22. As stated above, the Applicant respectfully traverses the perceived and explicit assertions of Official Notice and submits that the subject matter of claims 21-22 is not of such "notorious character" that it is "capable of instant and unquestionable demonstration as being well-known." Under MPEP 2144.03, the Examiner is now obligated to provide a reference(s) in support of the perceived assertions of Official Notice if the Examiner intends to maintain any rejection based thereon. Additionally, the Applicant respectfully requests the Examiner reconsider the assertion of Official Notice and provide any basis for the assertions of Official Notice.

In Addition, claims 21-22 depend from independent claim 18 and are allowable for at least the same rationale as in claim 18. Furthermore, The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 21-22 should such a need arise.

G. The Proposed Combination of Boucher and Hayes et al. (US 2003/0046330, hereinafter Hayes) Does Not Render Claims 5-9 and 24-28 Unpatentable

The Applicant turns to the rejection of dependent claims 5-9 and 24-28 under 35 U.S.C. § 103(a) as being unpatentable over Boucher as applied to claim 1 above, and further in view of Hayes. The Examiner in the Office Action on page 9 states that:

"Boucher does not disclose an upper layer protocol (ULP) processor; However, Hayes discloses an upper layer protocol (ULP) processor (fig. 3, [0017], NIC with an auxiliary processor for offloading iSCSI traffic). Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Boucher and Hayes to provide ULP support for a TCP/IP offload NIC card in order

to further enhance the card with more functionalities such as iSCSI traffic support over TCP/IP.”

The Applicant has reviewed Hayes and submits that **no Upper Layer Processor (ULP)** can be found in Hayes. Instead, Hayes teaches offloading iSCSI data over TCP/IP network using an auxiliary processor but nowhere in Hayes teaches or suggests that the auxiliary processor is equivalent to the function of a ULP. Specifically, Hayes in ¶.[0017] teaches:

“The present invention provides methods and apparatus for selective offloading of protocol processing from a host CPU to **an offloading auxiliary processor**. In one preferred embodiment of the invention, the auxiliary processor offloads the reception of iSCSI data over the TCP/IP network protocol, performing all necessary TCP/IP functions that occur during the normal course of a TCP/IP receive operation and all necessary iSCSI protocol functions. In the event of an error or other exceptional condition, the auxiliary processor transfers control back to the offloading host to handle the condition.”

Therefore, the Applicant submits that Hayes lacks the teaching or disclosure of a ULP as recited in dependent claim 5 by the Applicant. Therefore, the Applicant respectfully requests that the rejection of dependent claim 5 under 35 U.S.C. § 103(a) be withdrawn. Consequently, claims 6-9 depend from claim 5 and therefore are not obvious for at least the same rationale of dependent claim 5.

In Addition, the combination of Boucher and Microsoft do not teach or disclose the limitations of “**a network connector; a processor coupled to the**

network connector” and **“a unified driver coupled to the PCI bridge”** as recited in claim 1. Claims 5-9 depend directly or indirectly from independent claim 1 and are allowable for at least the same rationale as in claim 1. Consequently, the Applicant respectfully requests that the rejection of dependent claims 5-9 under 35 U.S.C. § 103(a) be withdrawn.

Similarly, the Applicant submits that dependent claim 24 shares the same argument that Hayes lacks the teaching of a ULP and consequently not rendered obvious by Hayes for the same rationale as in dependent claim 5. Therefore, the Applicant respectfully requests that the rejection of dependent claim 24 under 35 U.S.C. § 103(a) be withdrawn. Consequently, claims 25-28 depend from claim 24 and therefore are not obvious for at least the same rationale of dependent claim 24.

In Addition, the combination of Boucher and Microsoft do not teach or disclose the limitations of “handling a plurality of different types of network traffic **via a layer 2 (L2) connector**” and “determining which of the different types of network traffic accesses software services **via a single data path**” as recited in claim 18. Claims 24-28 depend directly or indirectly from independent claim 18 and are allowable for at least the same rationale as in claim 18. Consequently, the Applicant respectfully requests that the rejection of dependent claims 24-28 under 35 U.S.C. § 103(a) be withdrawn.

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Furthermore, The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 5-9, 24-28 should such a need arise.

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CONCLUSION

Based on at least the foregoing, the Applicant believes that all claims 1-28 are in condition for allowance. If the Examiner disagrees, the Applicant respectfully requests a telephone interview, and requests that the Examiner telephone the undersigned Attorney at (312) 775-8093.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

A Notice of Allowability is courteously solicited.

Respectfully submitted,

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/ Ognyan I. Beremski /
Ognyan I. Beremski, Esq.
Registration No. 51,458
Attorney for Applicant

MCANDREWS, HELD & MALLOY, LTD.
500 WEST MADISON STREET, 34TH FLOOR
CHICAGO, ILLINOIS 60661
(312) 775-8093 (FWW)